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AN INVESTIGATION OF HOLLAND'S THEORY OF VOCATIONAL CHOICE

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ABSTRACT

Students who had been administered the College Student Questionnaires, Part - 1 were categorized into the six personality types proposed by Holland. Following this procedure, the personality types' mean scores on the seven scales of the College Student Questionnaires were compared in an effort to determine whether or not significant differences existed among the types on the CSQ scales. The results indicated that significant differences did exist among the types on all but the Family Social Status scale. Furthermore, with the exception of the Enterprising type, students within each personality category scored in ways which were consistent with Holland's descriptions of those types. These findings, though not conclusive, do indicate that Holland's descriptions of the six personality types are generally consistent with the ways in which students classified within the types describe themselves on the CSQ scales.

In recent years there has been an increasing awareness of the need for a theory of vocational development that would be pragmatic enough to be useful to counselors and yet be capable of stimulating research related to vocational choice phenomena. The work of Holland (1966) represents an attempt to satisfy these needs by presenting a theoretical framework which is both logical and scientific in its development. The essence of Holland's position is to be found in his description of six basic personality types, each being associated with an environmental model bearing the same name. The types are the Realistic, the Intellectual, the Social, the Conventional, the Enterprising, and the Artistic. According to Holland each personality type seeks out, and is attracted by, environments that offer the satisfaction of needs associated with that type. Therefore, Realistic types would be expected to seek out Realistic environments, while Social types would be expected to seek out Social types of environments. Holland's thinking has been criticized by Isaacson (1967) on the grounds that it represents an oversimplification of the process of vocational development. Carkhuff et. al. (1967) indicate that Holland's framework does not meet the criteria of a true "theory."

Nevertheless, recent findings have tended to support Holland's theoretical constructs. For example, Wall, Osipow, and Ashby (1967) present evidence to support Holland's contention that each personality type seeks out occupational roles seen as consistent with the perception of self. Holland (1963-64) provides further evidence to support this point. There is also evidence to support his idea that certain of the personality types, especially the Realistic and Intellectual types, have more stable histories of occupational choice and that students' stereotypes of occupations

generally represent true pictures of what exists in those occupations (Holland, 1963-64).

In at least two studies (Davis, 1965; Holland & Nichols, 1964) results have supported Holland's conclusion that changes in career choice are more likely to occur if the original choice is not appropriate to the individual's sex role. Moreover, those students who do change career choices often appear to be, as Holland hypothesized, more dependent, to have greater creative potential, and to come from more permissive homes than the non-changers (Lo Cascio, 1965; Holland & Nichols, 1964; Osipow, Ashby, & Wall, 1965).

Although these studies and others (Astin and Holland, 1961; Holland and Lutz, 1968; Wall, Osipow, and Ashby, 1967) support Holland's general position, it is evident that many of them have investigated only the periphery of his theory. Stated more succinctly, there have been few studies designed to determine the accuracy of the personal characteristics which Holland ascribes to each personality type. Since these personality types constitute the foundation upon which Holland builds his theory, the strength of his framework is dependent upon the degree to which he is correct in describing each type. It was because of the need for research concerning the accuracy of these descriptions that the present study was undertaken.

The College Student Questionnaires, Part - I (Peterson, 1965) provided the pool of information concerning college student characteristics utilized in the study. Because many of the characteristics attributed to Holland's personality types are measured in the CSQ scales, it appeared that a study utilizing CSQ data would be appropriate for investigating Holland's ideas.

The CSQ is a recently developed, self-report instrument which provides a variety of information concerning student characteristics. In addition to general information concerning high school background, attitudes, home and parental family, and educational and vocational plans, the CSQ provides seven scales which are useful in studying students. These seven scales are Motivation for Grades (MG), Family Social Status (FS), Family Independence (FI), Liberalism (L), Social Conscience (SC), Peer Independence (PI), and Cultural Sophistication (CS). Each scale is derived from items within the CSQ, and the student's score is determined by the way he responds to the items making up the scale.

Design

Hypothesis

The hypothesis tested in this study was stated in null form. Specifically, it was hypothesized that no significant differences would be found between the six personality types when their mean scores were compared on the seven CSQ scales.

Sample

The original sample consisted of 1281 University of Maine students who had taken the CSQ during summer orientation in 1966. These students represented approximately 83% of the total number of students in the Class of 1970.

When the data were processed, 278 students were lost from the original sample because of two factors. Some students had not indicated a tentative major when they completed the CSQ, and this factor resulted in their removal from the sample. Secondly, a large number of students had not completed

items which were necessary for the scoring of the seven CSQ scales. A total of 1003 students remained after the data had been processed, and these students made up the sample used in the study. Of these 1003 students 449 were females, and 554 were males. A chi-square comparison was made of the proportions of males and females in the original sample and the sample used in the study. This comparison showed no significant differences between the two groups at the .05 level of confidence.

Procedure

Using Holland's Criterion List for Fields of Study (Holland, 1966, pp. 122 - 124), 3 judges independently categorized the items in the CSQ dealing with college majors into the six personality types. Two of the judges were experienced counselors possessing the doctorate while the third judge was an advanced doctoral student with two years of college counseling experience. The percentage of inter-judge agreement was 87%. On those items where there was disagreement among the judges, the major was categorized under the personality type which two of the three judges' agreed upon as the appropriate type for that major.

Next, all students in the sample were categorized into Holland's six personality types. This was done by identifying the student's major field of study as indicated by his response to the CSQ and then using the judges ratings to determine the appropriate personality type for that major. Sex was employed as a variable in determining the number of males and females within each personality type.

Prior to running analysis of variance, the Bartlett Test was employed to test for homogeneity of variance among the six personality types on each CSQ scale. The results, in each case, were not significant at the .05 level of confidence.

The six personality types were then compared on the seven scales of the CSQ. Analysis of variance was employed to determine whether or not significant differences existed between the mean scores of the six types on the seven scales of the CSQ. The .05 level of confidence was accepted for rejection of the hypothesis of no difference.

On those scales where analysis of variance yielded significant F ratios, Duncan's New Multiple Range Test (Duncan, 1955) was employed to determine where the significant differences lay between the means of the six personality types.

Results

Table 1 summarizes the categorization of subjects into Holland's six personality types. Examination of the table reveals that the largest number of males in the sample came under the Realistic and Intellectual categories. The largest number of females chose majors which placed them under Holland's Social type, and a substantial number of females chose majors which were indicative of the Intellectual or Artistic type. Relatively few males fell under the Social, Conventional, and Artistic categories, while the smallest number of females were classified as Conventional. It can also be seen that the types representative of most students in the sample were the Realistic, Intellectual, and Social types.

Place Table 1 about here

Table 2 summarizes the results of the Duncan Test on those comparisons where analysis of variance yielded significant F ratios. An examination of the table reveals that, among males, comparisons of mean scores on the CSQ scales for the six types resulted in rejection of the null hypothesis on two of the six scales; Liberalism, and Cultural Sophistication. On the Liberalism scale, the mean score of males classified as Intellectual differed significantly from the mean score of males classified as Realistic. On the Cultural Sophistication scale, males categorized as Artistic scored significantly higher than all other types except the Social type, while Social and Enterprising types scored significantly higher than males classified as Realistic or Conventional.

When the mean scores of the types were compared on the CSQ scales among female subjects, the null hypothesis was rejected on the Peer Independence and Cultural Sophistication scales. As indicated by the results, females of the Artistic type differ significantly from females categorized as Realistic when mean scores are compared on the Peer Independence scale. An examination of the level of Cultural Sophistication reported by the female subjects reveals that the Enterprising and Artistic types scored significantly higher than the Realistic type.

Place Table 2 about here

Analysis of variance for the combined male-female subjects within each personality category resulted in rejection of the null hypothesis on all but the Family Social Status scale. An examination of Table 2 shows that students classified as Artistic scored significantly higher than the Realistic and Conventional students on the Motivation for Grades scale. On the Family Independence scale, Social types scored significantly lower than Realistic and Intellectual students, while the Artistic students

scored significantly lower than students identified as Realistic. Students who had chosen majors which categorized them as Artistic, Intellectual, or Realistic, scored significantly higher on Peer Independence than did the Social type, and students classified as Realistic scored significantly lower on the Liberalism scale than all other types except the Conventional type. On the Social Conscience scale, the Social and Artistic students scored significantly higher than the students categorized as Intellectual, Realistic, or Conventional; Enterprising and Intellectual types scored significantly higher than either the Realistic or Conventional types on that same scale. Finally, comparisons of the six types on the Cultural Sophistication scale showed the means of the Realistic and Conventional students to be significantly lower than the means of all other types, while the mean score on that scale for the Artistic type was significantly higher than the means for all other types except those students classified as Enterprising.

Discussion

The present study examined the ways in which the six personality types rate themselves on items in the CSQ. The results of these ratings, then, provide a basis for comparing the way Holland describes these types and the ways in which the types describe themselves on the CSQ items. Such a comparison provides information pertinent to the validity of Holland's position.

In this study the utilization of sex as a variable resulted in few significant differences among the types on the seven CSQ scales. This might have been due to relatively small N's in each cell resulting from such a

breakdown. Since the most significant differences were found on the combined male-female comparisons, the discussion will focus on the findings of those comparisons.

Students who were classified as Realistic scored low on the Motivation for Grades, Liberalism, Social Conscience, and Cultural Sophistication scales of the CSQ. Such scores are consistent with Holland's description of this type. According to Holland (1966, pp. 19-22) the Realistic person is unsociable and oriented to the present. He is less scholarly than the Intellectual type and avoids goals, values, and tasks requiring artistic expression and social sensitivity. In general, it can be concluded that the Realistic students in the sample scored in a way which is consistent with Holland's theoretical formulations for that type. Some differences can also be noted. Holland states that this type sees himself as favorable to change and as dependent upon others rather than independent in judgment. The low scores on the Liberalism and Family Independence scales, however, indicate that the students classified as Realistic in this study do not conform entirely to Holland's description.

Examining the results of the Intellectual type on the CSQ scales indicates that this type of student is relatively independent of family ties, is autonomous in relation to peers, and is liberal in his attitude toward societal and cultural change. He appears to be moderately concerned about social injustice in comparison to the other types and has a cultivated sensibility to ideas and art forms. He sees himself as having studied extensively and considers good grades to be personally important.

Holland's description of the Intellectual type is supported by the results of the present study. Holland (1966, pp. 22 - 25) states that

this type copes with the social and physical environment primarily through the use of his intelligence. He is further described as independent, rational, and perceptive. He is asocial and likes creative activities such as art, music, and sculpture. Using Holland's own adjectives, this type's self-concept includes seeing himself as "unsociable," "independent," "scholarly," "introverted," "not nurturant or succorant," and "achieving" (Holland, 1966, p. 23). This study produced no evidence contradictory to Holland's description of this type.

According to Holland (1966, pp. 25 - 27) the Social person values social, ethical, and religious activities; and he prefers activities involving aesthetic and social expression. Adjectives used by Holland in describing this type's self-concept include "nurturant," "conservative," "dependent," "achieving," and "sociable" (Holland, 1966, p. 26). Among the needs associated with this type are the need for cordial personal relationships, and needs for dependency upon others. The scores of this type on the CSQ scales concur with Holland's description of this type.

The Conventional students' mean scores on the Motivation for Grades, Social Conscience, and Cultural Sophistication scales were lower than those of other types. On the Family Independence scale, their low mean score indicates greater dependence upon parental family than the Realistic and Intellectual types but less than other types. Furthermore, the results on the Peer Independence scale show only the Social and Enterprising students to be more concerned about peer expectations than the Conventional students, while the results on the Liberalism scale indicate a sympathy for an ideology of preservation rather than change.

Holland (1966, pp. 27 - 30) states that the Conventional person's approach to problems is stereotyped. He is conservative. He places a low value on aesthetic and religious matters and prefers structured rather than unstructured activity. He sees himself as subject to parental press for achievement, as academically an underachiever, and as sociable and conservative. The Conventional person is further described as dependent upon others in judgment and as less nurturant than the Social type. It can be clearly seen that the results of the present study appear to support Holland's formulations concerning the Conventional model.

Holland's description of the Enterprising person received relatively little support from the results of this study. The CSQ results show this type to be quite liberal in his attitude toward change; however, Holland (1966, pp. 30 - 33) describes him as being conservative. The degree of concern for the welfare of others is fairly high as reflected in this type's mean score on the Social Conscience scale, yet Holland describes this type as being exploitive in his relations with others. Although Holland states that this type places little value on aesthetic matters, this type's mean score on the Cultural Sophistication scale was second only to that of the Artistic type. In essence, then, the results of this study raise questions concerning the validity of Holland's description of this type.

On the basis of the present findings, the Artistic student may be described as motivated to do well academically, psychologically dependent upon parents and family, liberal in his attitude toward change, concerned about the welfare of dependent persons, and interested in the general area of the humanities. Again, this description generally agrees with

that given by Holland (1966, pp. 33 - 35).

It is important to note that comparisons on the Family Social Status scale showed no significant differences among the mean scores of the personality types. Although Holland (1966, pp. 19 - 35) indicates that differences do exist between the types in this dimension, no evidence was produced in the present study to support this viewpoint.

The limitations of the present investigation are evident to those familiar with Holland's work. No consideration was given to the fact that most people present personal characteristics which reflect combinations of two or more personality types. Also, students in the study were classified as one of the six types using only one variable as determinant: the choice of college major. Although Holland suggests this procedure as an appropriate one, other indices for determining personaltiy types among individuals are more reliable for research purposes. Procedures such as the utilization of Vocational Preference Inventory scores for classifying personality types are suggested by Holland if more reliable results are desired. Another limitation of the present investigation is to be found in the CSQ itself. Since the CSQ scales permit only limited descriptions of students, a number of the characteristics attributed to the types by Holland could not be measured with this instrument.

Further research is needed before the validity of Holland's position is known. However, the results of the present study indicate that Holland's description of the six personality types are generally in agreement with the way students within the types describe themselves on the seven scales of the College Student Questionnaires.

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Table 1

Results of the Categorization of Students into Holland's Six Personality Types

Personality Type	Males	Females	Total
Realistic	261	41	302
Intellectual	158	92	250
Social	31	192	223
Conventional	22	6	28
Enterprising	59	29	88
Artistic	23	89	112
Total	554	449	1003

Table 2

Comparisons of the Six Personality Types on the CSQ Scales Showing Significant F Ratios and Duncan Test Results*

Sex	CSQ Scale	Duncan Test: Highest Mean				Lowest Mean		F Ratio
Male	Liberalism	Intell. 25.40	Art. 25.97	Enter. 25.24	Soc. 25.23	Conv. 24.40	Real. 24.09	2.670
	Cultural Sophistication	Art. 23.13	Soc. 21.11	Enter. 20.77	Intell. 19.98	Real. 18.75	Conv. 18.25	6.903
Female	Peer Ind.	Art. 24.00	Conv. 24.04	Intell. 23.51	Soc. 22.84	Enter. 22.68	Real. 22.08	2.270
	Cultural Sophistication	Enter. 24.16	Art. 22.85	Intell. 22.31	Soc. 21.68	Conv. 20.87	Real. 20.76	3.068
	Mot. for Grades	Art. 28.08	Soc. 27.57	Intell. 27.21	Enter. 27.06	Real. 26.14	Conv. 25.48	4.425
	Family Ind.	Real. 22.12	Intell. 22.04	Conv. 22.00	Enter. 21.41	Art. 20.97	Soc. 20.51	4.501
	Peer Ind.	Art. 24.32	Intell. 24.08	Real. 23.99**	Conv. 24.04**	Enter. 23.24	Soc. 23.10	2.866
Males and Females	Liberalism	Art. 26.30	Enter. 25.86	Intell. 25.85	Soc. 25.68	Conv. 24.82	Real. 24.35	6.124
	Social Conscience	Soc. 29.42	Art. 28.89	Enter. 28.55	Intell. 27.67	Real. 26.68	Conv. 25.31	13.186
	Cultural Sophistication	Art. 22.91	Enter. 21.89	Soc. 21.60	Intell. 20.84	Real. 19.02	Conv. 18.81	17.812

* Underlined means are not significantly different; non-underlined means differ significantly at the .05 level of confidence.

** Conventional mean, though higher than Realistic mean, was not significantly different from other means. This was due to the relatively small N in this category as compared with the Realistic classification.